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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,081	10/01/2001	Richard C. Rose	2000-0573	5388

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EXAMINER	
JACKSON, JAKIEDA R	
ART UNIT	**PAPER NUMBER**
2655	

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,081	ROSE ET AL.	
	Examiner	Art Unit	
	Jakieda R Jackson	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 01 October 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. **Claim 1** is objected to because of the following informalities:

- "generating lattices for a speech utterance" should be --generating lattices for speech utterances--, --generating lattices for a speech utterance--

--generating lattices of speech utterances--, or the like.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 8 and 12-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Digalakis et al. (U.S. Patent No. 5,864,810), hereinafter referenced as Digalakis.

Regarding **claims 1, 8 and 14**, Digalakis discloses a method, process and controller of rescoring the results of automatic speech recognition (ASR), hereinafter referenced as ASR method, comprising:

generating lattices for speech utterances (column 11, lines 40-44);

concatenating the lattices (clustering engine; 4, element 12) into a single concatenated lattice (create a set of tied models; column 6, lines 45-53); and

applying at least one language model (language model) to the single concatenated lattice in order to determine relationships between the lattices (column 13, lines 38-46).

Regarding **claim 12**, Digalakis discloses the ASR method, but lacks wherein the speech recognition model is a hidden Markov model (column 4, line 60 – column 5, line20).

Regarding **claim 13**, Digalakis discloses the ASR method wherein the controller is a network server (figures 4 and 5).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. *An alternate rejection for* **Claims 1, 8 and 13-14** are rejected under 35 U.S.C. 102(e) as being anticipated by Reynar et al. (U.S. Patent No. 6,581,033), hereinafter referenced as Reynar.

Regarding **claims 1, 8 and 14**, Reynar discloses a method, process and controller of rescoring the results of automatic speech recognition (ASR), hereinafter referenced as ASR method, comprising:

generating lattices for speech utterances (column 8, lines 43-46);

concatenating the lattices (concatenation process) into a single concatenated lattice (pieces combined into a larger lattice; column 8, lines 32-54); and

applying at least one language model (language model) to the single concatenated lattice in order to determine relationships between the lattices (column 8, lines 1-17).

Regarding **claim 13**, Reynar discloses the ASR method wherein the controller is a network server (figure 1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. **Claims 2, 6-7, 9, 11 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Digalakis in view of Thrasher et al. (U.S. Publication No. 2002/0052742), hereinafter referenced as Thrasher.

Regarding **claim 2**, Disgalakis discloses the ASR method of rescoring the results of automatic speech recognition, but lacks further comprising generating a confidence score.

Thrasher discloses the ASR method comprising:

generating a confidence score (confidence measure; column 3, paragraphs 0035 and 0036) after applying the at least one speech recognition model (language model; figure 2, element 110), to determined whether the generated lattices are acceptable (identify improperly identified, column 3, paragraphs 0035 and 0036).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Digalakis's method such that it generates a confidence score, to identify which patterns are most likely to have been improperly identified by the recognizer (column 3, paragraph 0035).

Regarding **claims 6, 9 and 16**, Digalakis discloses the ASR method, but lacks wherein the rescoring the automatic speech recognition is used in a mobile communications system.

Thrasher discloses the ASR method wherein the rescoring the automatic speech recognition is used in a mobile communications system, wireless communication (column 2, paragraph 0024), to relay information.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Digalakis's method such that the ASR is used in a mobile communications system, to provide the user with alternatives to the speech recognition output provided by the engine (column 1, paragraph 0002).

Regarding **claims 7 and 11**, Digalakis discloses the ARR method, but lacks wherein rescoring the automatic speech recognition is used in a satellite communications system.

Thrasher discloses the ASR method wherein rescoring the automatic speech recognition is used in a satellite communications system (satellite dish; column 2, paragraph 0022), to relay information.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Digalakis's method such that the ASR is used in a satellite communications system, to provide the user with alternatives to the speech recognition output provided by the engine (column 1, paragraph 0002).

9. **Claims 3-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Digalakis in view of Thrasher, as applied to claim 2, in further view of Waibel et al. (U.S. Patent No. 5,712,957), hereinafter referenced as Waibel.

Regarding **claim 3**, Disgalakis in view of Thrasher, as applied to claim 2 above, discloses the ASR method of rescoring the results of automatic speech recognition, but lacks wherein the confidence score is compared to a predetermined value.

Waibel discloses the ASR method wherein the confidence score (confidence score) is compared to a predetermined value (predetermined threshold value) in order to determine whether to perform the automatic speech recognition process again (repeat again; column 1, lines 56-59), to avoid incorrect recognition.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Disgalakis in combination with Thrasher's method such that the confidence score is compared to a predetermined threshold as in Waibel, to repair misrecognition of speech (column 1, lines 9-12).

Regarding **claim 4**, Disgalakis in view of Thrasher and Waibel, as applied to claim 3 above, discloses the ASR method, but lacks wherein the automatic speech recognition process is performed again if the confidence score is less than the predetermined value.

Waibel discloses the ASR method wherein the automatic speech recognition process is performed again if the confidence score is less than the predetermined value (until the score is above the threshold; column 1, lines 56-59), to avoid incorrect recognition.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Disgalakis in combination with Thrasher and Waibel's method invention wherein the automatic speech recognition process is performed again if the confidence score is less than the predetermined value as in Waibel, to repair misrecognition of speech (column 1, lines 9-12).

10. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Digalakis in view of Mohri et al. (U.S. Patent No. 6,243,679), hereinafter referenced as Mohri.

Regarding **claim 5**, Disgalakis discloses the ASR method, but lacks wherein the rescoring is performed after a speech recognition model has been compensated to reflect acoustic environmental data transducer data.

Mohri discloses the ASR method wherein the rescoring is performed after a speech recognition model has been compensated to reflect acoustic environmental data (acoustic analyzer; figure 1, element 100; with column 4, lines 4-8 and column 3, lines 51-55) and transducer data (transducer; figure 1, element 112 with column 4, lines 13-18), to determine a natural fit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Disgalakis's method wherein the rescoring is performed after a speech recognition model has been compensated to reflect acoustic environmental data transducer data as in Mohri, for optimal reduction of redundancy and size of a weighted and label graph (column 3, lines 27-34).

11. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Digalakis in view of Pan et al. (U.S. Patent No. 6,304,844), hereinafter referenced as Pan.

Regarding **claim 10**, Digalakis discloses the ASR method, but lacks wherein the speech utterances are received from a personal digital assistant (PDA).

Pan discloses the ASR method wherein the speech utterances are received from a personal digital assistant (column 12, lines 47-50 and column 13, lines 1-13), to avoid redesign or reprogramming of the DSP.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Digalakis's method wherein the speech utterances are received from a PDA as in Pan, thus allowing easy, quick, and inexpensive integration, avoiding redesign or reprogramming of the DSP.

12. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Digalakis in view of Waibel.

Regarding **claim 15**, Disgalakis discloses the ASR method of rescoring the results of automatic speech recognition, but lacks comprising a fourth section that determines whether an automatic speech recognition process should be performed again.

Waibel discloses the ASR method comprising a fourth section that determines whether to perform the automatic speech recognition process again (repeat again; column 1, lines 56-59), to avoid incorrect recognition.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Disgalakis's method such that it determines whether an automatic speech recognition process should be performed again, to repair misrecognition of speech (column 1, lines 9-12).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Alshawi (U.S. Patent No. 6,233,544) discloses a method and apparatus for language translation.
- Chou et al. (U.S. Patent No. 5,797,123) discloses a method of key-phase detection and verification for flexible speech understanding.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703. 305.4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ
August 26, 2004

W. R. YOUNG
PRIMARY EXAMINER